

**Effects of Past Oil and Gas Activities:** Several oil fields (e.g., Guadalupe, Casmalia, Lompoc) within the onshore project area, which extends from the Santa Barbara County line at the Santa Maria River in the north to the Santa Ynez River and Point Arguello in the south and inland to the cities of Santa Maria and Lompoc. Development and production of these fields, which is still occurring in some cases, dates back to the early 1900's. The impacts of these oil fields include habitat loss and pollution, such as the diluent contamination associated with the Guadalupe oil field. Past construction activities associated with OCS-related oil and gas projects are limited to the construction of the Point Pedernales pipeline and the associated Lompoc Oil and Gas Plant. Impacts of construction include vegetation removal, with associated changes in erosion, sediment deposition, and invasive weeds, and disturbance to wildlife. Within the onshore project area, these activities may have affected an estimated 225-245 acres of vegetation and wildlife habitat (A.D. Little, 1985), the vast majority of which was related to pipeline construction. Most of this area has probably recovered, since revegetation efforts were carried out along the pipeline corridor and natural recovery would have occurred during the approximately 15-year period since the pipeline was completed.

#### 4.7. CULTURAL RESOURCES

##### 4.7.1 REGULATORY OVERVIEW

**Cultural resources** include any prehistoric or historic sites, buildings, districts, structures, traditional use areas, or objects considered to be important to a culture, subculture, or community for scien-

tific, traditional, religious, or other reasons. Cultural resources encompass three categories: archaeological resources (both historic and prehistoric), *architectural* resources, and *traditional cultural* resources (U.S. Navy 2000).

**Archaeological resources** are any material remains (sites) of human life or activities that are at least 50 years of age and that are of archaeological interest. Material remains include physical evidence of human habitation, occupation, use or activity including the site, location, or context in which such evidence is situated. Items of archaeological interest may provide scientific or humanistic understanding of past human behavior, cultural adaptation, and related topics through the application of scientific or scholarly techniques. These resources can be identified and evaluated for significance according to each site's cultural importance, integrity, and ability to yield information (Minerals Management Service 1998).

Prehistoric archaeological sites consist of various forms of evidence of human activities that spanned time from approximately 13,000 years ago until the time of European contact in 1542. (The dividing line between prehistoric and historic is not precise given the 257-year lapse between initial contact and European settlement of California.) Prehistoric artifacts include utilitarian and non-utilitarian objects, such as flaked and ground stone tools as well as bone and shellfish objects. Occasionally, remnants of basketry or cordage, remains of living spaces, fire hearth, bedrock milling stations, mortuary remains, or rock art exist as parts of prehistoric sites. These sites may manifest themselves as a scatter of surface material or be a subsurface or midden deposit. Often sites include surface and subsurface components. In addition, sites may be submerged and include intact sites buried beneath the seabed, isolated artifacts deposited on the seafloor from erosion of an upland site, or remnants of aboriginal watercraft.

**Table 4.7.2-1. Archaeology studies in the area.**

Area of the Study	Title	Citation
Pt. Mugu Sea Range	Shipwreck Study, Pt. Mugu Sea Range Environmental Impact Statement	U.S. Navy. Department of the Navy, Naval Air Warfare Center Weapons Division. April 1998
Santa Barbara Channel	Channel Islands National Park and Channel Islands National Marine Sanctuary, Submerged Cultural Resource Assessment	CINPS. Don Morris and James Lima, 1996
Morro Bay to Canadian Border	OCS Study MMS 90-0087 through 90-0092 California, Oregon, and Washington Archaeological Resource Study	MMS. 1990. Espy, Houston and Associates.
Morro Bay to Mexican Border	OCS Study MMS 87-0025. Archeological Resource Study	MMS. 1987. P.S. Associates.
Pt. Conception to Mexican Border	Archaeology Literature Survey and Sensitivity Zone Mapping of the Southern California Bight Area. Volume I, Technical Report	BLM, 1978. Science Applications Incorporated.

Historic archaeological sites can be subsurface remains that contain buried foundations or other structures such as pier footings, depositional sites such as refuse dumps, and other locations. The sites may include surface remains of walkways, roads, or structural remnants. Submerged historic sites include shipwrecks, cargo spills, historic anchorages and wharves, and aircraft.

**Architectural Resources** are standing buildings, dams, canals, bridges and other structures of historic or aesthetic significance. Architectural resources must be more than 50 years old to be considered for protection under existing cultural laws.

**Traditional Cultural Resources** are those associated with cultural practices and beliefs of a living community that are rooted in history and are important in maintaining the continuing cultural identity of the community. Traditional cultural resources may include archaeological sites; location of historic events; sacred areas; sources of raw materials used to produce tools and sacred objects; and traditional hunting or gathering places. The community may consider these resources essential for the persistence of their traditional culture.

What Laws and Regulation Govern Cultural Resources?

The Minerals Management Service (MMS), under various Federal laws and regulations, ensures that regulated Outer Continental Shelf (OCS) activities do not adversely affect significant archaeological resources.

National Historic Preservation Act of 1966, as amended, (16 USC 470, PL. 95-515) under section 106, requires Federal agencies to identify historic properties their actions could affect, determine whether or not there could be a harmful or adverse affect, and if so, to try to avoid or reduce the effect. The section also requires consultation with State historic preservation officers and tribal historic preservation officers.

Archaeological and Historic Preservation Act of 1974 (16 USC 469-469c, PL93-291) requires Federal agencies to notify the Secretary of the Interior when they find that any federally permitted activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data.

#### 4.7.2 STUDIES IN THE AREA

Table 4.7.2-1 lists some of the numerous studies that address onshore and offshore archaeological resources in the area.

#### 4.7.3 REGIONAL SETTING

In addition to the studies cited above, previous environmental impact statements and reports have de-

scribed the region's offshore and onshore, prehistoric and historic, archaeological resources of the in great detail. These reports, whose geographic scope for archaeological resources overlap, include the northern Santa Maria Basin (URS 1986), the central Santa Maria Basin (Arthur D. Little 1985), the southern Santa Maria Basin (Arthur D. Little 1986) and the western Santa Barbara Channel (U.S. Geological Survey 1974, Science Application Inc. 1984, SLC 1992).

### PREHISTORIC SETTLEMENT

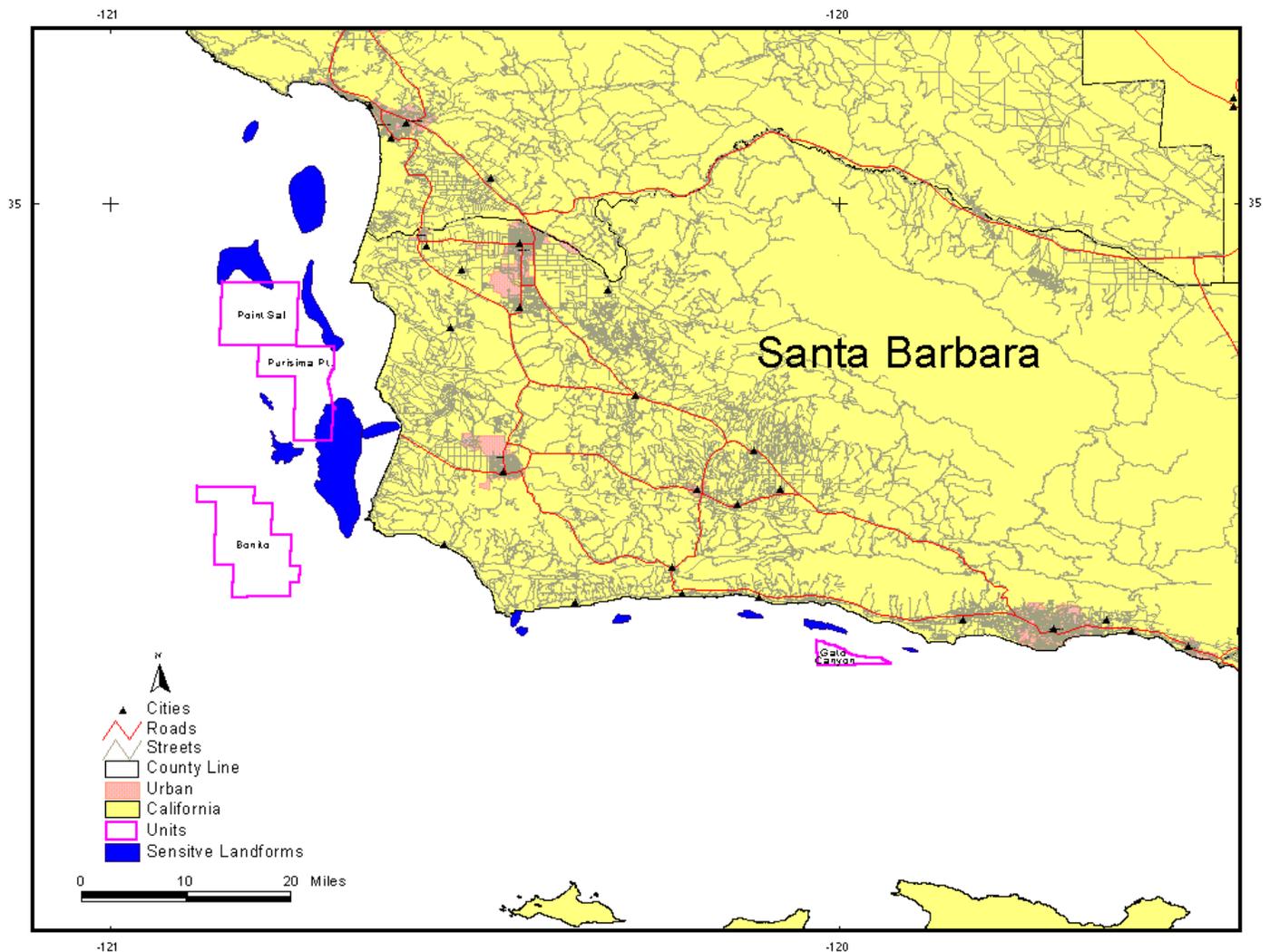
Archaeological evidence from the Channel Islands indicates that prehistoric populations may have settled in the area and traversed coastal areas by water as early as 13,000 years ago (Johnson and others 1999). Table 4.7.3-1 summarizes the sea level fluctuation and the result on the coastline during the period of human habitation. Although sea levels were much lower than today, by perhaps 46 to 20 meters, the Channel Islands separated by the mainland by a minimum of five miles (MMS1987; U.S. Navy1998). The presence of archaeological sites dating to the late Pleistocene/Early Holocene era, approximately 12,000 to 8,000 Before Present (BP), suggests that maritime travel occurred between the mainland and the islands (U.S. Navy1998) and that aboriginal populations may have exploited littoral and nearshore resources (SLC1992). A well-developed maritime economy may have been in place by 5,500 BP with favored settlement locations consisting of embayments, lagoons, and estuaries (MMS1990).

Submerged prehistoric sites consist of remains deposited during the period of lowered sea level. Rising sea levels and the associated high-energy wave environment are supposed to have inundated and destroyed many sites. However, certain landforms which would have been attractive to human habitation and offered protection to archaeological resources during inundation include submerged river valleys, embayments, and island complexes. In addition, archaeological resources may be deposited offshore by the continuing erosion of coastal landforms (MMS 1987, 1990; SLC1992). Figure 4.7.3-1 shows the approximate locations of the areas that have been identified as potentially containing these landforms.

Chumash groups occupied the coast from present-day Morro Bay in San Luis Obispo County to Malibu. Gabrieleno groups occupied the coastline from present-day Malibu to Mission Viejo. The Chumash exhibited a unique maritime subsistence adaptation, although the marine resources appear to have been less important to Chumash groups north of Point Conception (MMS1990). The Gabrieleno groups, while developing a maritime technology, were not as well oriented to this type of resource procurement as the Chumash (BLM 1978). The plank canoes of the Chumash, *tomols*, and of the Gabrieleno, *te'aat*, allowed the development

**Table 4.7.3-1. Sea level fluctuation from present to 14,500 years Before Present (B.P.).**

Years B.P.	Water Depth (meters below present sea level).	Sea Level Changes	Result
3,500 to present	0	Very slow rise	Present still stand
8,500 to 3,500	18 to 0	Slow rise	Erosion
8,500	18	Still stand	18 m shoreline
10,000 to 8,500	20 to 18	Still stand	Cut platform
11,000 to 10,000	46 to 20	Rapid rise	Erosion
11,000	46	Still stand	46 m shoreline
12,000 to 11,000	24 to 46	Rapid fall	Exposure
14,500 to 12,000	60 to 24	Rapid Rise	Erosion

**Figure 4.7.3-1. Sensitive landforms for submerged prehistoric sites.**

of trade between offshore island and the mainland villages. The plank canoes and the activities they fostered played an important role in the region's economy and social development (U.S. Navy 1998). Foundering at sea or in the nearshore and overturning of these watercraft in the surf zone were common. Wrecks of tomols may have occurred in the project area, but it is unlikely that the remains of such craft would be preserved in the offshore environment. The more likely areas for preservation of such craft would be within shoreline caves and under talus slopes of cliff-faced beaches (SLC1992).

**HISTORIC SETTLEMENT**

The first European exploration of the Santa Barbara Channel and the central California coast north of Point Conception occurred in 1542 from vessels under the command of Juan Rodriguez Cabrillo. During the exploration, Cabrillo died and, according to some sources, is buried on one of the offshore islands. For the next 267 years, until permanent Spanish colonization started in 1769, the area was largely ignored except for an occasional voyage of exploration and dis-

covery. Vessels of commerce, the Manila galleons, sailed down the California coast enroute to Acapulco from Asia. Some of the galleons were lost along the California coast and reports of a galleon lost in the Channel Islands cannot be completely dismissed (Morris and Lima 1996). During the Spanish colonial period, voyages of the Manila galleons continued, as did vessels engaged in coastwise trading and international commerce, exploration, and other pursuits, including smuggling. The Mexican period in California (1822 to 1846) saw little change in the character of coastal shipping over that which occurred during the Spanish period. During the American period (1846 to present) coastwise shipping increased. Prior to completion of the Southern Pacific railroad, coastal communities, most lacking natural harbors, constructed piers as a means of accessing maritime trade for shipment of agricultural products. A thriving lumber trade between ports in the Pacific Northwest and the coastal communities developed and continued into the 1920s. In the 20<sup>th</sup> century, as coastwise trade decreased it was replaced by trans-Pacific trade, commercial fishing, military, petroleum exploration and development, and leisure as sources of widespread maritime activ-

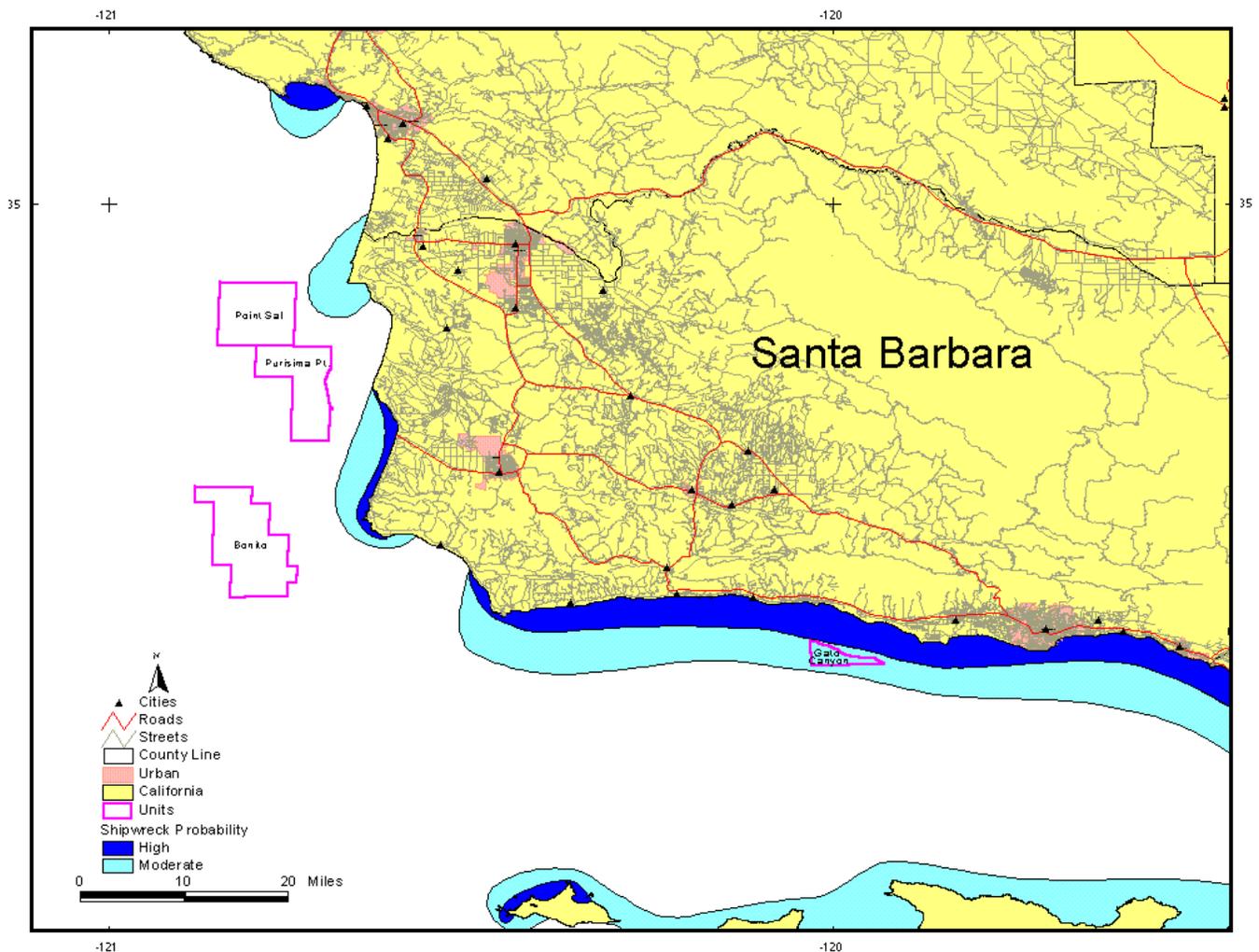


Figure 4.7.3-2. Shipwreck sensitivity zones.

**Table 4.7.4.1-1. Summary of archaeology information by unit.**

	Gato Canyon Unit. OCS-P-0460, 0462, and 0464	Bonito Unit OCS-P-0443, 0445, 0446, 0449, 0450, 0499, and 500	Purisima Point Unit OCS-P-0426, 0427, 0432, and 0436	Pt. Sal Unit OCS-P-0415, 0416, 0421, and 0422
Cultural Resource Survey and Report	None. Archaeological Survey and Report must be completed prior to exploration.	None. Analysis of geophysical survey data reveals no indication of sites. Archaeological Survey and Report must be completed prior to delineation on OCS-P 0500.	Yes on OCS-P-0432, revealed indication of sites. Additional analysis ordered.	Yes on OCS-P-0416, revealed indication of sites. Additional analysis ordered.
Landforms with Possible Prehistoric Sites	No. Leases seaward of 16,500-year-old shoreline.	No. Leases seaward of 18,000-year-old shoreline.	No. Leases seaward of 16,500-year-old shoreline	Eastern portion of 0432 seaward of 16,500-year-old shoreline. Southeast portion of 0432 may contain lagoon, estuary or embayment landform.
Vessel Lost List-MMS	MV Brant. Oil exploration vessel. Sank two miles north of lease boundary in State waters.	No vessel listed. Possible sites off lease detected by surveys.	No vessel listed.	No vessel listed
Vessel Lost List-Pt. Mugu Sea Range	No information.	No vessel listed.	No vessel listed.	No vessel listed.
Vessel Lost List-State Lands Commission	No information.	No vessel listed.	No vessel listed.	No vessel listed.
Vessel Lost List-U.S. Navy SPAWAR Systems Command	No information.	No vessel listed.	No vessel listed.	No vessel listed.
Central Coast Information Center at UCSB	No information.	No vessel listed.	No vessel listed.	No vessel listed.
Fisherman's Contingency Fund Claims from Unknown Causes	Loss on OCS-P-0462 and 0464.	Loss on southeast corner of OCS-P-0500.	None	None
Predictive Zone—MMS	Moderate	Low	Low	Low
Predictive Zone—Pt. Mugu Sea Range	Moderate	Low	Moderate	Moderate

ity. The area contains the remains of vessels that came to grief while engaged in each of these activities.

Shipwrecks tend to be concentrated around sites that focus maritime traffic, such as ports, commercial piers and shipping lanes, hazards to navigation, such as islands, headlands, and prominent points, and in areas of variable weather and sea conditions. These factors have been integrated into a series of shipwreck location prediction maps for the Pacific coast of the United States (MMS1987 and 1990). Figure 4.7.3-2 indicates the predictive zones for the project area. For

example, several of these factors combine to explain the concentration of shipwrecks between Point Conception and Point Arguello (a so-called Graveyard of the Pacific) and the western end of San Miguel Island. The balance of shipwreck sites not attributable to the above mentioned factors appear to be randomly distributed (BLM1978, MMS1987, SLC1992). Other historical resource sites include aircraft ditched at sea and the remains of maritime infrastructure, such as wharves and piers.

#### **4.7.4 DESCRIPTION OF THE AREA AFFECTED**

This section describes three areas. The first area is that for the Proposed Action (delineation drilling) and consists of the offshore units where delineation drilling takes place. The second area is that for existing operations and follow-on development of the 36 undeveloped leases. The third area is that which could be affected by an oil spill, approximately Point Sur in Monterey County to Point Fermin in Los Angeles County.

##### **4.7.4-1. AREA OF THE PROPOSED ACTION**

This section describes the area that may be affected by delineation drilling from a MODU on the Gato Canyon Unit, Bonito Unit, Purisima Point, and Point Sal Units.

Table 4.7.4.1-1 shows the description of the units and the sources examined for records indicating the actual or potential presence of prehistoric or historic resources.

Data on prehistoric and historic resource sites comes from a number of sources. Archaeological resource surveys have been completed on portions of several units. The records of several agencies, MMS, the U.S. Navy's Point Mugu Sea Range and SPAWAR Systems Command, the California State Lands Commission, and the Central Coast Information Center at the University of California, Santa Barbara were consulted to determine if vessels had been reported as lost in the area of the leases or if sites on the leases had been documented. Predictive zones, areas evaluated for indications of landforms of interest and for their potential to contain historic resource sites, were examined (SAI 1978, MMS1987, MMS 1990, U.S. Navy1998). For shipwrecks, an area's potential was evaluated based on several factors. Differences in methodology between studies account for the different designations for the same area.

Fisherman's Contingency Fund claims for gear loss due to unknown sources were plotted for each unit. Gear loss may be indicative of a shipwreck site.

The MMS Regional Director has required operators to conduct an archaeological resource survey and report on the Gato Canyon, Purisima Point, and Point Sal Units prior to the submittal of new or revised exploration plans. These surveys and reports, which must comply with the Region's Notice to Lessees 98-05 which may be viewed on the world wide web at <http://www.mms.gov/omm/pacific/offshore/ntls/nt198-p05.htm>.

#### **4.7.4.2 AREA OF POTENTIAL DEVELOPMENT ACTIVITIES**

The area potentially affected by development of the 36 undeveloped leases includes the segments of the nearshore and coastal area of Santa Barbara county, from Point Sal to Point Arguello and the area around El Capitan State Beach. As summarized above, the studies in the area have noted the presence of a variety of prehistoric and historic resources and the potential for discovery of additional, significant sites. For example, of the hundreds of vessels reported lost in the area of the Channel Islands, only a small percentage have been located and even fewer have been documented. These yet-to-be-discovered vessels represent every activity associated with the islands (Morris and Lima, 1996). As remote-sensing technology improves and systematic surveys are conducted, more sites are discovered. Similarly, the number of documented onshore prehistoric sites increases with the systematic surveying and documentation.

The 77-acre promontory comprising Point Sal, managed by the Bureau of Land Management, is sensitive for archaeological resources with Native American use in the area ranging from approximately 200 to 5000 years. The area is managed by BLM as an Area of Critical Environmental Concern. There is not public access to BLM-managed land at Point Sal (BLM 2001).

The following properties in the area are listed on the National Register of Historic Places database for Santa Barbara: Point Conception Light House Station, Space Launch Complex 10 on Vandenberg AFB, and the SS Yankee Blade, a vessel wrecked near Point Arguello

A review of California Native American Heritage Commission records for the area of potential development reveals no listed Native American sacred sites in the onshore portion of the study area. However, the absence of specific site information in the sacred lands records does not indicate the absence of traditional cultural resources in the project area (Rob Wood 2001, Pers. comm). There are numerous traditional resource sites associated with the Chumash on VAFB. In addition, there is a specifically identified property in the vicinity of Point Conception, referred to by some in the Chumash culture as the Western Gate because of its role in Chumash beliefs about death and the after-life (USAF 1998).

Known onshore prehistoric sites in the study area appear to cluster around stream drainages. Additional sites inland along the drainages are likely. There is a likelihood of prehistoric site deposits between the current shoreline and the shoreline of 8500 BP. Artifacts deposited by erosion of onshore sites, with the exception of large stone artifacts, will be short-lived. This shoreline is approximated by the 18-meter isobath (approximately 2.5 kilometers from the present shoreline

between Point Sal and Point Arguello and 0.5 kilometers near El Capitan. Beyond this depth, areas of potential bay, estuarine, and lagoon deposits exist offshore between Point Sal and Point Arguello and in the area of El Capitan should be considered highly sensitive archaeologically (MMS 1987). These areas are indicated on figure 4.7.3-1.

The archaeological site data summarized in table 4.7.4.2-1 reveals that the potential corridor of the pipeline landfall to the processing plant for the hypothetical development in the northern Santa Maria Basin contains several prehistoric and historic sites. The description of the site does not indicate archaeological significance or importance. The data suggests a variety of sites in the area of the Shuman Creek drainage that will need to be evaluated in determining the pipeline route.

A number of vessels have been lost in the area between Pt. Sal, Purisima Point, and Point Arguello, primarily at nearshore locations. Table 4.7.4.2-2 lists these vessels. The area around Point Sal to three nautical miles seaward is considered a medium sensitivity zone for shipwrecks. As shown on figure 4.7.3-1, the area from Purisima Point to Point Arguello is considered a high sensitivity zone immediately offshore. A medium sensitivity zone, which extends less than three nautical miles offshore, borders the high-sensitivity zone. As indicated by table 4.7.4.2-2, few vessels have been lost in the El Capitan area. In the vicinity of El Capitan, a high sensitivity zone for shipwrecks extends from the shore to approximately 2.5 nautical miles, bordered by a medium sensitivity zone, which extends beyond three nautical miles.

**Table 4.7.4.2-1. Onshore archaeological sites in the area of Shuman Canyon, Santa Barbara County, California**

SBa Site Number	Function	Burial (Y/N)	SBa Site Number	Function	Burial (Y/N)
512	Campsite	Y	2175	Quarry Site	N
722	Hunting Site	N	2193	Temp. Site	N
723	Campsite/ Quarry Site	N	2319	Temp. Site	N
724	Temp. Site (Quarry)	N	2320	Temp. Site	N
725	Temp. Site (Quarry)	N	2368-H	Unclassified	N
726	Unclassified	N	2476-H	Unclassified	N
727	Unclassified	N	2479	Campsite	N
728	Unclassified	N	2568	Unclassified	N
729	Unclassified	N	2688	Temp. Site (Quarry)	N
730	Unclassified	N	2715-H	Historic Trash Scatter	N
731	Temp. Site	N	3013	Campsite	N
732	Quarry Site	N	3014	Temp. Site (Hunting)	N
733	Temp. Site (Lithic Scatter)	N	3018	Temp. Site (Hunting)	N
734	Campsite/Burial Site	Y	3026	Temp. Site	N
735	Unclassified	N	3027	Temp. Site (Hunting)	N
939	Temp. Site (Camping)	N	3028	Temp. Site	N
940	Campsite	N	3029	Temp. Site	N
941	Campsite	N	3030	Campsite	N
942	Campsite (Seasonal)	N	3033	Temp. Site	N
962	Temp. Site (Camping)	N	3034	Temp. Site	N
963	Temp. Site (Camping)	N	3035	Temp. Site (Hunting)	N
965	Temp. Site (Shellfisher Camp)	N	3036	Temp. Site	N
966	Unclassified	N	3040	Temp. Site (Hunting)	N
967	Temp. Site (Camping)	N	3296	Quarry Site	N
968	Temp. Site (Camping)	N	3297	Hunting Site	N
969	Temp. Site (Shellfisher Camp)	N	3298	Hunting Site	N
991	Temp. Site (Hunting)	N	3386	Historic Trash Scatter	N
992	Temp. Site	N	3390	Temp. Site (Hunting)	N
1001	Temp. Site (Hunting)	N	3393	Temp. Site (Hunting)	N
1002	Temp. Site	N	3424	Temp. Site	N
1728	Temp. Site (Lithic Scatter)	N	3426	Temp. Site (Lithic Scatter)	N
1997	Temp. Site (Hunting)	N	3503	Temp. Site (Lithic Scatter)	N
2174	Quarry Site	N			

**Table 4.7.4.2-2. Vessels lost between Point Sal and Point Arguello, California**

Ship	Place Lost	Date Lost	Cause
Harvard	Point Arguello	1931	Stranded
JJ Loggie	Point Arguello	1912	Stranded
Lone Eagle	Point Arguello	1940	Collision
Los Angeles	Point Arguello	1942	Foundered
Nippon Maru	Point Arguello	1933	Stranded
Santa Rosa	Point Arguello	1911	Stranded
Sibyl Marston	Point Arguello	1909	Stranded
Ellin	Point Arguello	1963	Foundered
Suomi	Point Arguello	1955	Collision
Yankee Blade	Point Arguello	1854	Stranded
DD261 Delphy	Point Arguello	1923	Stranded
DD296 Chauncey	Point Arguello	1923	Stranded
DD297 Fuller	Point Arguello	1923	Stranded
DD309 Woodbury	Point Arguello	1923	Stranded
DD310 S.P. Lee	Point Arguello	1923	Stranded
DD311 Nicholas	Point Arguello	1923	Stranded
DD312 Young	Point Arguello	1923	Stranded
Evylyn H	Point Arguello	1976	Burned
Isis	Point Arguello	1964	Foundered
Margaret B	Point Arguello	1955	Foundered
Miracle	Point Arguello	1974	Stranded
Presephone	Point Arguello	1970	Stranded
Tiki Gem	Point Arguello	1976	Stranded
Welcome	Point Arguello	1932	Stranded
Yankee Mariner	Point Arguello	1949	Burned
Edith	Point Pedernales	1849	Stranded
Annie Lysle	Point Sal	1875	Stranded
Crovate	Point Sal	1923	Stranded
Jan Lin	Point Sal	1974	Stranded
Leucadia	Point Sal	1952	Stranded
Little Dipper	Point Sal	1954	Stranded
Marlin VIII	Point Sal	1959	Stranded
Narhel	Point Sal	1949	Stranded
Norma J	Point Sal	1953	Stranded
Putty Ann	Point Sal	1984	Stranded
Sea Me	Point Sal	1975	Foundered
Hopestill	Purisima Point	1949	Stranded
Scotia	Purisima Point	1914	Stranded
WCF Co. No. 2	Santa Maria River	1920	Stranded
Robert Sudden	Surf	1905	Stranded
El Commodore	Surf	1946	Stranded
Brant	El Capitan	1960	Burned

**4.7.4.3 AREA POTENTIALLY AFFECTED BY OIL SPILLS**

The area that could be affected by an oil spill consists of the coastal area from approximately Point Sur in Monterey County to Point Vicente in Los Angeles County. This area consists of the intertidal zone to an area extending inland approximately 1.6 kilometers from the mean higher high water mark for the area south of Morro Bay.

As noted above, the northern extent of the Chumash appears to have been the Morro Bay area.

Along the coast, the Salinan people inhabited the area from Piedras Blancas to Big Creek. Most villages are found along interior river drainages, although some habitation sites were found along the coast. Evidence suggests that Salinan villages were located above the fog line while temporary camps used by travelers are found along the coast. The area north of Big Creek into the Carmel Valley was inhabited by the Esselen people, whose settlement patterns remain poorly known. Generally, large coastal village sites are absent in this area, where only temporary camps are

found (MMS 1990).

This pattern is somewhat different south of Point Conception where large coastal village sites on the mainland and the islands around drainages persisted until the beginning of the Historic period. Temporary camps are also prevalent along the coastline and inland along the drainages. Remnants of these sites remain in great abundance in the lesser-developed areas of the Southern California Bight. They are threatened by coastal erosion and cliff retreat that continues to be a serious problem in this area.

Generally in the central California, there appears to have been very little use of coastal areas prior to 5,500 BP. Between about 5,500 and 1,000 years BP, there occurred a profusion of sites along the central coast, with a strong focus on maritime resources in the early part of this period. Almost all settlement sites in Monterey County from this period occur in the immediate area of the coastline. After this period, evidence suggests abandonment of coastal sites for larger village sites inland. Coastal sites during this time tend to be task specific sites for gathering and processing shellfish and or small, temporary camps. Many of the sites in central California represent habitation sites. Habitation sites are found in protected areas of high resource yield such as embayments, lagoons, lower drainages or areas slightly inland. Shellfish processing stations or camps may be found in the more exposed areas of the coastline. Sites are found at or near the mouths of virtually every substantial drainage from Morro Bay to Monterey, which appears to reflect a genuine preference for such points along the coast. Many shoreline sites are actively eroding (MMS 1990).

The MMS shipwreck database indicates that 81 "historic wrecks" those occurring before 1946 occurred along the entire Monterey county coastline (3.3 wrecks per mile of coastline), with the earliest reported wreck in 1831, with the time span of the first ten wrecks taking 44 years. San Luis Obispo county has 21 wrecks (0.3 wrecks per mile of coastline), with the earliest wreck in 1852, with the time span of the first 10 wrecks taking 64 years.

#### **4.7.5 EFFECTS OF PAST OFFSHORE OIL AND GAS ACTIVITIES ON CULTURAL RESOURCES**

Regulations require that the Minerals Management Service (MMS), under various Federal laws and regulations, ensure that regulated Outer Continental Shelf (OCS) activities do not adversely affect significant archaeological resources. Since 1973, the Region has required the lessees to conduct lease-specific archaeological surveys and report the survey's results as a means to determine what actions, if any, are necessary to protect the resource. The archaeological survey identifies potential prehistoric and historic

sites. The archaeological report presents the analysis and evaluation of the survey data. The report serves as the basis for determining if potential archaeological resources exist and what actions are necessary to protect the potential resources. If a potential resource is detected, it must be avoided or the site documented and data recovered prior to conducting activities that may affect the site. Given the expense of documenting sites in water depths encountered on the OCS, avoidance has been the preferred mitigation method. Approximately 36 archaeological surveys have been conducted in the Pacific Region. All operators avoided the potential resources identified in the surveys (MMS, 1995). Other measures are undertaken during construction to protect previously undetected resources. For example, pipeline emplacement between Platform Heritage and Harmony, pre-installation remotely operated vehicle survey of the pipeline route and real-time monitoring of the touchdown point by the ROV during the pipeline emplacement ensured any resource not detected by previous surveys would be discovered. Regulations require the cessation of operations in the area of such a discovery until direction can be provided on how to protect the resource (MMS, 1997). In this project, no resources were detected.

#### **4.7.6 NATIVE AMERICAN CONCERNS**

Previous consultation with Native American respondents documented in environmental impact statements highlighted the following concerns:

- Participation in identification, documentation, and data recovery programs at archaeological sites.
- Protection of ancestral sites by avoidance, especially mortuary sites, human burials in residential areas, and other sacred sites.
- Protection of plant and animal communities, and other resource areas;
- Participation in determination of the importance of sites.

Although local Native Americans consider all resources significant, they have identified certain types of resources as more important than other types. For example, a burial generates greater concern than isolated artifacts, just as an ethnohistoric village site is considered more sensitive than a scatter of lithic flakes.

Any disturbance to important Native American sites would be a significant adverse impact. They do not consider that archaeological and excavation and data recovery to represent sufficient mitigation. Avoidance of the affected sites to the maximum extent feasible, monitoring, and adherence to State burial remains legislation would reduce potential impacts and

would be the only acceptable measure to mitigate a significant impact to an insignificant level.

These environmental impact statements, whose geographic scope for archaeological resources overlap, include the northern Santa Maria Basin (URS 1986); the central Santa Maria Basin (Arthur D. Little 1985); the southern Santa Maria Basin (Arthur D. Little 1986) and the western Santa Barbara Channel (U.S. Geological Survey 1974, Science Application Inc. 1984).

Additional concerns regarding monitoring of offshore energy related construction activity were revealed in a number of Santa Barbara County Energy Division assessments of condition effectiveness (SBC 1991, 1992, 1993). These concerns include:

1. Sites were not avoided or construction occurred when Native American and archaeological monitors were not present. Part of the problem with site avoidance was unfamiliarity with permit conditions by all parties and to a misunderstanding of the kinds of activities that required monitoring.
2. Modern sacred sites, that is, those currently used by Chumash, should be shown proper respect and avoided.
3. Need for life-of-the project monitoring. For example, if a buried pipeline is reopened, monitoring may be needed because of potential archaeological sites in staging areas, parking areas, and access roads.
4. Responsibilities for protecting burials or reburials and other sites in the event of an oil spill.
5. Establish clear and informal lines between the project operator, project archaeologists, Native Americans, and responsible government agencies.
6. Include Native American representatives in the initial survey to determine presence of sites (phase 1 investigation) and decisions associated with avoiding sites. Information they could provide include knowledge about local sensitivities, familiarity with local cultural resources, and identity of religious areas, such as areas used for reburials.
7. Include Native American representatives in the characterization of site (phase 2 investigation) and discussions regarding mitigation plans on all discoveries.
8. Plans and agreements should address issues regarding Native American monitors including the need to ensure adequate numbers of

monitors, transportation of monitors to and from construction sites, definitions of “disturbance”, and criteria on which to determine the need for monitoring. These issues are particularly important since mitigation (data recovery) often took place as the pipeline was constructed.

9. Resolution of conflicts between scientific archaeology value of a resource and the value to Native Americans.
10. Native American participation in determining the ownership and curation of artifacts recovered during construction.

Concerns have also been expressed about the effect development may have on traditional cultural properties, such as “the Western Gate” at Point Conception, which have engendered a high level of controversy (Craig and others 1978, Haley and Wilcoxon, 1996, 1997, 1999, Khus-Zuarte, 1998). Evidence suggests that this “gate” or portal was one of several that are important in Chumash spiritual beliefs. Traditionally, each gate appears to have a strong association with Chumash people within a particular region. Concern has also been expressed about the present-day view of the continuing significance of this and other sites. Disagreement exists over the boundaries of the traditional cultural property. One definition limits the location to the immediate vicinity of Point Conception, present site of the U.S. Coast Guard Point Conception Lighthouse Station. A broader definition encompasses the mainland coast within view of Point Conception. The Point Conception Lighthouse Station is listed on the National Register of Historic Places because of its significance as a maritime aid to navigation, not as a traditional cultural property.

Concern has also been expressed regarding the effects of degradation of the environment and the availability of plants used in traditional cultural practices, such as those materials used in the construction of Chumash watercraft (Cordero 2000).

## 4.8 VISUAL RESOURCES

This section outlines the visual character of the project area. Visual resources are considered an important feature of the area.

### 4.8.1 REGULATORY SETTING

Visual resource protection is the subject of a variety of official State and local policies adopted as part of regional and community land use management plans. This section summarizes the provisions of these laws and plans.

The California Coastal Act of 1976 was adopted after State voters approved the Coastal Conservation Act [Proposition 20] in 1972. A key factor that led to the passage of this landmark legislation was the visible deterioration of the coastal environment because of development pressures of a growing population. The Act's visual resource preservation provisions, contained in section 30251, protects the scenic and visual qualities of coastal areas as a resource of public importance. Permitted development must be sited and designed to protect views to and along the ocean and scenic coastal areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated by local government must be subordinate to the character of its setting.

Under the California Environment Quality Act guidelines (Appendix G), the aesthetic effects of an action must be considered. The guidelines recognize the special visual resources associated with the coastal zone.

As required by the State Coastal Act, Santa Barbara County, in 1980 developed the Santa Barbara County Land Use Plan and in 1982 its Coastal Zoning Ordinance (CZO). As a result, the County now has jurisdiction over development in the generally 3,000-foot-wide coastal zone. In citing the importance of the coastline visual resources, the LCP stated, in part:

"The scenic resources of Santa Barbara's coastal zone are of incalculable value to the economic and social well-being of Santa Barbara County. The beauty of the Santa Barbara coastline is world-renowned; it is the basis of the County's strong tourist and retirement economies and is a source of continuing pleasure for the local populace. The visual resources of the coastal zone include its beaches, sand dunes, coastal bluffs, headlands, wetlands, estuaries, islands, hillsides and canyons, upland terraces and plains, and its rivers and streams. These resources are vulnerable to degradation through improper location and scale of building development, blockage of coastal views, alteration of natural landforms by poor cutting, grading and filling practices, and by poor design or placement of roadside signs and utility lines. The

primary concern of the coastal Act is to protect views to these scenic resources from public areas such as highways, roads, beaches, parks, coastal trails and accessways, and vista points."

The County's Comprehensive Plan Open Space Element includes scenic highway corridors, parks and recreation areas, and views of coastal bluffs as significant visual resources (Santa Barbara County, 1995).

### 4.8.2 STUDIES IN THE AREA

The table 4.8.2-1 lists some of the numerous studies that address onshore and offshore aesthetic resources in the area.

### 4.8.3 REGIONAL SETTING

The regional setting for the project is the areas onshore areas proximate to the Units.

#### 4.8.3.1 POINT SAL UNIT

Long, straight sandy strand, offshore rocks, and rocky beaches characterize the coastline in the area most proximate to the Unit. Sand dune headlands and coastal terraces are the principal landforms. The dunes are part of the least disturbed of the remaining dune systems in California. Oil development in the Guadalupe Dunes, north of the Santa Maria River is currently undergoing abandonment (MMS, 1998). The dunes from the Santa Maria southward toward Point Sal are part of the nature Conservancy's Nipomo Dunes Preserve (CCC, 1997). Military structures, including missile-firing installations, are sited at Vandenberg Air Force Base, south of Point Sal. Dunes, the Point Sal headlands, and the Casmalia Hills support a varied wildlife population while rocky shoreline at Mussel Point and Point Sal provide habitat for marine mammals. The most important aesthetic resources in this area include the scenic hillsides and shoreline of Point Sal, the rocky water's edge at Mussel Point and Point Sal, and the Guadalupe dunes (BLM, 1981). The Point Sal area displays a varied geology with excellent exposures of unique features (CCC, 1987). The area's overall aesthetic rating ranged from medium high to high (BLM, 1981). Platform Irene in the Point Pedernales Unit may be seen from this areas when visibility allows.

#### 4.8.3.2 PURISIMA POINT UNIT

Long, straight sandy strand, offshore rocks, and rocky beaches characterize the coastline in the area proximate to the Unit. Sand hill headlands and low coastal terraces north and south of Purisima Point are the principal landforms. The rocky shoreline at

Purisima Point provides habitat for marine mammals. The Point itself has been identified as one of “the most important aesthetic resource” in the area, although military structures at Vandenberg AFB dot the landscape in this area (BLM, 1981). Public access is limited in the area by Vandenberg AFB (CCC, 1987; 1997). South of Purisima Point to the Santa Ynez River features low coastal terraces, low sand dunes and a flat sandy strand (BLM, 1981). Ocean Beach County Park, the only public access in the area, also features wetlands and a stream corridor (CCC, 1997). The area’s overall aesthetic rating was judged to be medium high (BLM, 1981). Platform Irene in the Point Pedernales Unit may be seen from this areas when visibility allows. The coastal route of the Southern Pacific Railroad traverses the area along the coast starting south of Purisima Point. Rail passengers are afforded spectacular coastal views as a result of this route.

**4.8.3.3 BONITO UNIT**

Long, straight sandy strand, offshore rocks, and rocky beaches characterize the coastline in the area proximate to the Unit. Point Pedernales is a marine mammal haul-out site and a seabird nesting area. Low coastal terraces with rolling, relatively barren foothills extend from south of Point Pedernales to Jalama. Drainage swales meander out of the foothills and cut through the terraces to a rocky shoreline exposed to the north of Rocky Point but slightly more sheltered to the south. The water’s edge between Point Pedernales and Rocky Point is described as “exceedingly dramatic” with offshore rocks, rocky intertidal areas, small rocky and sand pocket beaches accenting wave cut terraces (BLM, 1981). Point Argeullo light

enhances the picturesque nature of this area (BLM, 1981). Jalama Beach County Park provides the only public access to this area and features wetlands, bluffs, coastal foothills and a sandy beach (CCC; 1987, 1997). The area’s overall aesthetic rating was judged to be medium high (BLM, 1981). Platforms in the Point Arguello Unit may be seen from this area when visibility allows. . The coastal route of the Southern Pacific Railroad traverses the area along the coast. Rail passengers are afforded spectacular coastal views as a result of this route.

**4.8.3.4 GATO CANYON UNIT**

A moderately rolling high coastal terrace, sandy beaches and coves, and steep, stream cut canyons leading to the crest of the Santa Ynez mountain range characterize the coastline in the area proximate to the Unit. Sandy beaches, popular surfing breaks, riparian canyons, State parks, occasional riparian areas at stream outfalls to the ocean, and ocean views of the Channel Islands are among the most important aesthetic features of this area (BLM, 1981). The area also includes cultural modifications including the presence of offshore platforms and onshore oil and gas infrastructure, commercial centers, a major resort hotel, golf courses, and residential areas of Goleta extending from the urban growth boundary eastward to the Coal Oil Point Reserve. The area is traversed by the main south to north transportation corridor, U.S. Highway 101 and the Southern Pacific Rail Road. This segment of US 101 is eligible for designation as a California scenic highway, but the designation has not been made (<http://www.caltrans.ca.gov/hq/LandArch/scenic/cahisys.htm>). However, the County has, in all areas

**Table 4.8.2-1. Visual resource studies.**

Area of the Study	Title	Citation
California	Inventory and Evaluation of California Coastal Recreation and Aesthetic Resources	BLM, 1981. POCS Technical Paper No. 81-5. Granville Corporation, 1981.
California	Impacts of Outer Continental Shelf (OCS) on Recreation and Tourism.	MMS, 1987. OCS Study 87-0064 through 87-0068. Dornbusch and Associates. 1987
Point Conception and Point Arguello	Point Arguello Field and Gaviota Processing Facility Area Study and Chevron/Texaco Development Plan EIS. Technical Appendix L: Aesthetic Environment. Part 2 Visual Resources	MMS. 1984
California	California Coastal Resource Guide	California Coastal Commission. 1987
California	California Coastal Access Guide, 5 <sup>th</sup> ed.	California Coastal Commission, 1997

where there are views from Highway 101 to the ocean, established a View Corridor Overlay designation in its coastal zoning ordinance and local coastal plan. The County Board of Architectural Review reviews all development in this area to ensure that visual resources are protected.

#### **4.8.4 EFFECTS OF PAST OFFSHORE OIL AND GAS ACTIVITIES**

Since its advent in the late 1890s, offshore oil and gas activities have engendered concern over the aesthetic appearance of the offshore and onshore support facilities. In fact, prior to the 1969 oil spill, community resistance to offshore oil and gas as primarily driven by aesthetics (Lima, 1994). The cumulative effects of past offshore oil and gas activities in the area are attributable to development in State submerged lands and the OCS. Since the 1980s, operators of the Santa Ynez Unit, the Point Arguello Unit, and the Point Pedernales Unit have made payments to the Coastal Resources Enhancement Fund, which provides enhancement projects that will compensate for residual impacts to coastal resources that are not otherwise mitigated. Santa Barbara County Findings of Approval for past offshore oil and gas projects in Santa Barbara County have found adverse project and cumulative impacts to recreation, tourism, and aesthetics from construction and operation of the project. To mitigate general, diffused, project and cumulative impacts in these and other areas, Santa Barbara County created a Coastal Resources Enhancement Fund which receives annual payments over the life of the project to be used for projects that enhance coastal recreation, aesthetic, tourism, or other environmentally sensitive resources (SBC, 1993).

A 1993 analysis of the program for the Santa Ynez Unit suggested that while the mitigation is effective, CREF expenditures tended to be more heavily weighted towards recreation, despite oil development impacts being as great or greater on environmentally sensitive resources, aesthetics, and tourism. In other words, while payments were sufficient to mitigate cumulative impacts, allocation of the Fund by the County may have caused an imbalance in mitigation across categories. The report noted that aesthetic impacts in areas that had not previously experienced offshore development would be more pronounced than areas that already had development (SBC, 1993).

## **4.9 RECREATION**

Recreation makes up an important component of the economy and, in part, defines the quality of life and the sense of place for Santa Barbara county residents and visitors (MMS, 1996; MMS, 1998; MMS 2000). Recreation activities may be classified as ocean-dependent, that is, activities where direct access to the water is necessary for the activity to take place. These endeavors include surfing, swimming, diving, fishing, sailing, beach combing, and beach games. Ocean-enhanced activities include cycling, hiking, running, sunning, nature appreciation, and camping (California Department of Parks and Recreation, 1980). Aesthetic enjoyment of visual resources is addressed in a separate section.

### **4.9.1 REGULATORY SETTING**

The California Coastal Act of 1976 was adopted after State voters approved the Coastal Conservation Act, Proposition 20, in 1972. A key factor that led to the passage of this landmark legislation was the restriction of coastal access and recreation opportunities. Table 4.9.1-1 summarizes the key Coastal Act recreation policies.

### **4.9.2 STUDIES IN THE AREA**

Table 4.9.2-1 lists some of the numerous studies that address onshore and offshore recreation resources in the area.

### **4.9.3 REGIONAL SETTING**

For the purposes of analysis, the regional setting is divided into two sections. The first section deals with the setting for the proposal to drill delineation wells on four units. The second section deals with the area that may be affected by development activities. This area extends from Point Sur in Monterey County to Point Vicente in Los Angeles County.

#### **4.9.3.1 REGIONAL SETTING FOR THE PROPOSAL**

Recreation sites in the area may be accessed through a variety of points managed by the National Park Service (Channel Islands National Park); the California Department of Parks and Recreation (State Parks); Santa Barbara County Department of Parks and Recreation (County Parks); and municipalities including the cities of Carpinteria and Santa Barbara. Table 4.9.3.1-1 lists the access points and the primary recreation activity that takes place at each site. Table

**Table 4.9.1-1. California Coastal Act recreation policies.**

Coastal Act Section	Policy
30211	Development shall not interfere with the public’s right to access to the sea where acquired through use of or legislative authorization, including but not limited to the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.
30213	Low cost visitor and recreation facilities shall be protected, encouraged, and where feasible, provided. Development providing public recreational opportunities are preferred.
30220	Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.
30221	Ocean front land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided in the area.
30234	Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded.
30240 (b)	Development in areas adjacent to . . . parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those recreation areas.

4.9.3.1-2 lists attendance at selected units in the area. Recreation and activity information for each site illustrates the variety of activities at each site, to facilitate comparison of common activities across sites, or to highlight the uniqueness of a site. Generally, sites that offer greater amenities or those that are unique qualities are more highly valued. Similarly, attendance data is provided to indicate the current level of day use and the value added camping use.

**4.9.3.1.1 POINT SAL UNIT**

Coastal recreation units in the vicinity of the Point Sal Unit include Nipomo Dunes Preserve and Point Sal State Beach. Table 4.9.3.1-1 summarizes the attributes of these locations. The dunes from the Santa Maria southward toward Point Sal are part of the nature Conservancy’s Nipomo Dunes Preserve. Road conditions and closure due to launches from Vandenberg AFB may restrict access to Point Sal State Beach (CCC, 1997). As indicated by table 4.9.3.1-2, Point Sal State Beach was closed during 2000.

**4.9.3.1.2 PURISIMA POINT UNIT**

Public access is limited in the area by Vandenberg AFB (CCC, 1987; 1997). Ocean Beach County Park, VAFB Fishing Access and VAFB Beach Access provide the only public access in the area. . Table 4.9.3.1-1 lists the access points and the primary recreation activity that takes place at each site. Table 4.9.3.1-2 lists attendance at selected units in the area.

Ocean Beach County Park, located where the Santa Ynez River meets the Pacific Ocean, offers a variety of daytime coastal-enhanced and coastal-de-

pendent recreational uses (California Coastal Commission, 1991; Santa Barbara County, 2000a). Estimated attendance from July 1999 to June 2000 was 331,192 (Santa Barbara County, 2000b). While the park provides access to up to five miles of beach, this access may be restricted because of nesting of shorebirds (California Coastal Commission, 1987; VAFB, 2000; Wallace, 2000). During 2000, portions of the beach were closed because of nesting of the Western snowy plover, *Charadrius alexandrinus nivosus* (Santa Barbara County, 2000c). Water quality advisories may also affect use of the facilities. In 1999, the beach had health advisories posted for 119 days (EPA, 2000). These advisories were triggered by rain events or urban runoff (NRDC, 2000).

Limited access for sport fishing is provided by Vandenberg AFB from blufftop trails down to pocket beaches. Access is granted only on weekend and holidays for up to 50 people (California Coastal Commission, 1987, 1997), although in 1999 typical access was approximately 35 people (VAFB Game Warden’s Office, personal communication). In 2000, beach access was limited to a one quarter mile and one-half mile at two locations because of Western snowy plover nesting from March 1 through September 30 (VAFB, 2000).

**4.9.3.1.3 BONITO UNIT**

Jalama Beach County Park provides the only public access to this area and features wetlands, bluffs, coastal foothills and a sandy beach (CCC; 1987, 1997). Table 4.9.3.1-1 summarizes the attributes of this location. Jalama Beach County Park, located where Jalama Creek meets the Pacific Ocean, offers a variety of coastal-enhanced and coastal-dependent day and

**Table 4.9.2-1. Recreation studies.**

Area of the Study	Title	Citation
California	Impacts of Outer Continental Shelf (OCS) on Recreation and Tourism.	MMS, 1987. OCS Study 87-0064 through 87-0068. Dornbusch and Associates. 1987
California	California Coastal Resource Guide	California Coastal Commission. 1987
California	California Coastal Access Guide, 5 <sup>th</sup> ed.	California Coastal Commission, 1997
Santa Barbara and Ventura County	Santa Barbara and Ventura Counties Shoreline, California. Final Reconnaissance Report	U.S. Army Corps of Engineers, 1997
Santa Barbara County	Santa Barbara County: Two Paths	MMS. 1996. OCS Study MMS 96-0036, Molotch, et. al.
Santa Barbara County	Petroleum Extraction Industry in Santa Barbara County, California. An Industrial History	MMS. 1998. OCS Study MMS 98-0048, Nevarez, et. al.

overnight recreational uses (Arthur D. Little, 1984; [www.jalama.com](http://www.jalama.com), California Coastal Commission, 1991; Santa Barbara County, 2000a). Estimated attendance from July 1999 to June 2000 was 296,059 (Santa Barbara County, 2000b). In 1999, the beach had health advisories posted for 192 days (EPA, 2000). These advisories were triggered by rain events or agricultural runoff (NRDC, 2000).

#### 4.9.3.1.4 GATO CANYON UNIT

Gaviota State Park, Refugio State Beach, El Capitan State Beach, Haskell's Beach/Bacara Resort, Sandpiper Golf Course, Santa Barbara Shores County Park, and the Coal Oil Point Reserve/Sands Beach provide the main public access to this area. Generally, the beaches in this area enjoy greater usage with milder ocean and meteorological conditions than the beaches north of Point Conception. Table 4.9.3.1-1 lists the access points and the primary recreation activity that takes place at each site. Table 4.9.3.1-2 lists attendance at selected units in the area.

Highway 101 between Gaviota and Refugio State Beaches feature many pull-offs from which beaches may be accessed. These parcels are within the boundaries of the State Park. Santa Barbara Shores County Park, adjacent to Sandpiper Golf Course offers no direct access to the beach from the bluff top. However, the beach is none-the-less accessible as a normally continuous strand (depending on the tides) extending from Coal Oil Point/Sands Beach to Sand Piper Golf Course to the recently improved public access at Haskell's Beach/Bacara Resort (James Lima, pers. obs.). This strand serves as beach access for the urban area of the western portion of Goleta and Isla Vista.

Table 4.9.3.1-1 indicates the number of days in 1999 that the beaches in this area were posted with health advisories (EPA, 2000).

#### 4.9.3.2 REGIONAL SETTING FOR DEVELOPMENT

Recreation sites in the area may be accessed through a variety of points managed by the National Park Service (Channel Islands National Park); the California Department of Parks and Recreation (State Parks); counties and municipalities. Because of the diversity of the large area, this section provides a more general description for ocean recreation areas by local government, California State Park Unit, and National Park Unit.

Many factors affect recreational resources including supply, demand, site quality and accessibility, and site closures and restrictions, as well as diversification and expansion of activities (Pollock 1997). Communities recognize recreation opportunities, especially coastal-dependent and coastal-enhanced recreation, as a defining characteristic of the community for both resident and visitor (King 1997, MMS 1996a, b, and c, MMS 2000). Population growth is a robust predictor of demand (Science Applications Inc, 1984). For example, by 2040, population is estimated to grow 145 percent for San Luis Obispo County, 110 percent for Santa Barbara County, and 90 percent for Ventura County. Furthermore, changing consumer preferences affect recreational resources. In San Luis Obispo, the last 12 years has seen an increase in tourism and shoreline recreation and increasing popularity of boating, hiking, mountain biking and other forms of coastal recreation (CCC 2001).

**Table 4.9.3.1-1. Public coastal recreation facilities.**

	Entrance or Parking Fee	Parking	Restrooms	Lifeguard	Campground	Showers	Firepits	Path to Beach	Bike Path	Hiking Trail	Facilities for Disabled	Boating Facilities	Equestrian Trail	1999 Advisory/Warning Days Posted with Advisory	Concessions	Ocean Dependent Activities	Ocean Enhanced Activities
Nipomo Dunes Preserve		X	X							X	X		X			X	X
Point Sal State Beach		X						X								X	X
VAFB Fishing Access		X						X								X	X
Ocean Beach County Park		X	X				X	X			X					X	X
VAFB Beach Access		X														X	X
Jalama Beach County Park	X	X	X		X		X		X	X	X				X	X	X
Gaviota State Park	X	X	X	X	X	X	X			X	X	X			X	X	X
Refugio State Beach	X	X	X	X	X	X	X			X	X				X	X	X
Bike Path and Beach Ramp								X	X	X	X					X	X
El Capitan State Beach	X	X	X	X	X	X	X		X	X	X				X	X	X
Haskell's Beach Access		X				X										X	X
Sandpiper Golf Course																	X
Santa Barbara Shores County Park		X							X	X			X				X
Coal Oil Point Reserve		X						X		X							X
Isla Vista County Park		X						X			X						X
Window to the Sea Park		X															X
Isla Vista Beach		X														X	X

**Table 4.9.3.1-2. Santa Barbara County beach units.**

Unit Name	Day Use	Camping	Total
Nipomo Dunes Preserve*	Not Available	Not Allowed	Not Available
Point Sal State Beach**	0	0	0
VAFB Access	2,100 (maximum allowed)	Not Allowed	2,100
Ocean Beach County Park*	331,192	Not Allowed	331,192
Jalama Beach County Park*	Not Available	Not Available but Allowed	296,059
Gaviota State Park**	47,475	15,420	62,895
Refugio State Park**	59,768	53,282	113,050
El Capitan State Park**	61,296	92,208	153,504

\* Unpublished data, Santa Barbara County, California, Park Administration

\*\* Unpublished data, California Department of Parks and Recreation

Coastal access points for recreation along the coast from Point Sur in Monterey County to Point Fermin in Los Angeles County tend to be fairly concentrated. Generally, 4 to 10 formally identified access points cluster in 5 to 7 mile segments, with the higher concentrations in shorter segments in highly developed areas. Access ranges from high use recreational beaches offering a range of amenities and activities to stairways to pocket beaches. In less-developed areas, formally identified access is fairly isolated. These units tend to be State and county parks that feature a mix of day and overnight uses and provide the only recreational access in the area (California, 1997).

One reason for the concentration of access is a result of how public access is gained. For example, a recent California Coastal Commission report notes that in San Luis Obispo County, public access often occurs in clusters in urban areas because access is secured as mitigation from development projects. However, distribution of access is important and large expanses of rural areas may offer little vertical or lateral access. Furthermore, the goal of providing public access may sometimes conflict with an be subordinate to coastal resource protection. Finally, the report examines how access requires upland support facilities such as signage and parking facilities are important elements for fostering and addressing changing demands for accesses (CCC 2001).

Besides changes in access, the mixture of activities changes as one moves north to south through the area. North of Point Conception, in water recreation tends to require a wetsuit and is limited to activities such as surfing, scuba and skin diving, and snorkeling. However, coastal-enhanced activities abound. As do coastal dependent activities, such as wildlife viewing and scenic enjoyment, which require the isolated dramatic sweep of the coastline and habitat of the area. South of Point Conception, water-contact activities become more numerous, with greater levels of participation.

Recreation sites in the area may be accessed through a variety of points. Because of the diversity of the large area, this section provides a more general description for ocean recreation areas by local government, California State Park Unit, and National Park Unit.

## MUNICIPALITIES

Many California communities have so-called “beach areas” that extend inland for a short distance from the water’s edge. Within these beach areas, economic activity is predominantly related to water-oriented recreation and most of a community’s water-oriented recreation is concentrated. Beyond the

“beach area” water-oriented recreation and tourism is more diffused and less distinguishable from other recreation. These “beach areas” also encompass adjoining residential areas. These areas would include Morro Bay, Avila, Shell Beach, Pismo Beach, Santa Barbara, Carpinteria, Ventura, Oxnard, Santa Monica, Venice, Manhattan Beach, Hermosa Beach, and Redondo Beach. A small craft harbor or municipal recreational pier anchor or focus activities in these areas.

For example, Santa Barbara’s “beach area” extends from Leadbetter Beach through the harbor to East Beach, a distance of approximately 2.5 miles and extends inland a few city blocks to the area of the Southern Pacific Railroad tracks. An oceanfront thoroughfare, Cabrillo Boulevard, with its sidewalk and beachpath, connects the two beaches. Most of the area’s ocean-oriented activity takes place in this area. Hotels and restaurants in the area highlight their proximity to the ocean. Most retail businesses in this area service ocean-oriented activity. However, even if such establishments are outside the beach area, such as a dive shop, surf shop, or kayak rental establishment, this area provides the “put in” point. Moreover, this area exemplifies the quality of life aspects prized by residents and visitors.

Santa Barbara Harbor is primarily a small craft port with limited cargo handling capability. Marina facilities include boat slips, fuel docks, fish hoist and ice machine, marine specialty shops and businesses, restaurants, the maritime museum, sport fishing and dive boat charters, convenience stores, yacht club and boat rentals. It also hosts the Coast Guard cutter for the area. The harbor’s West Beach area features sand volleyball courts. The breakwater, itself a tourist and recreation attraction, forms a calm water area adjacent to West Beach that is ideally suited for youth sailing instruction and activities from April through October.

Stearns Wharf, which bounds the harbor area on the east, is the city’s most important ocean-oriented tourism and recreation attraction with several restaurants, shops, marine education facilities, and is a public fishing pier. Stearns Wharf, as the mid-point between the beach area’s Leadbetter and East Beach and at the foot of the city’s main thoroughfare, State Street, focuses the ocean-oriented activities in Santa Barbara. Palm Park offers a mile of beach frontage, picnic areas, a cultural center, and grass areas with soccer fields and other recreation amenities. The park is site of the weekend open-air art show. East Beach hosts a recreational center and public bathhouse and features sand volleyball courts. The city maintains several public parking lots throughout the area.

County or city parks outside of these beach areas provide other coastal access for a wide range of

activities. These range from camping and day use facilities in isolated areas to day use parks offering a wide variety of amenities to parking areas with coastal access.

### **CALIFORNIA STATE PARKS**

The California Department of Parks and Recreation maintains many units throughout the study area. These units tend to be placed away from municipal areas and often offer improved campsites, day use, and other amenities. (Several coastal State park units within Los Angeles County are operated by Los Angeles County.) Table 4.9.3.2-1 lists some of these units with attendance figures. Note that most of the opportunities for beach camping are north of Los Angeles County.

### **NATIONAL PARK SYSTEM**

Table 4.9.3.2-2 indicates the level of water-oriented recreational activity that occurs at Channel Islands National Park and the overlying Channel Islands National Marine Sanctuary. Access to the five island park is generally from the small craft harbors at Santa Barbara, Ventura, or Channel Islands (Oxnard). Table 4.9.3.2-3 indicates on-island activity. The peak season for island visitation occurs March through October with the greatest use occurring May through June. Coastal units in the Santa Monica Mountains National Recreation area are maintained by State or local agencies.

#### **4.9.3 EFFECTS OF PAST OFFSHORE OIL AND GAS ACTIVITY**

The 1929 development of the State tideland and submerged lands portion of the Ellwood Oil Field from more than a dozen piers initiated offshore oil and gas development in the project area. Today, the Ellwood pier is the last of the structures that dotted the area eastward to Coal Oil Point (Lima, 1994). Sandpiper Golf Course and the Santa Barbara Shores County Park occupy the original site of the Ellwood Field. Beach users in the area still must be ware of metal footings and other structures left in place when the piers were abandoned and removed. Offshore Haskell's beach, debris fields from development attracts local scuba divers who have designated the area "the junkyard" which is a relatively easy shore dive. Offshore oil and gas production from platform Holly in the State's South Ellwood field started in 1966. The Bacara Resort is adjacent to the onshore processing plant for platform Holly. Occasional leaks from oil pipelines from State offshore leases in the area have

resulted in beach and coastal cleanup in the area. Development of the Santa Ynez Unit on the Federal OCS started in 1976. Las Flores Canyon between El Capitan State Beach and Refugio State Beach contains the onshore processing facilities for the SYU. Storage tanks and shut-in onshore processing facilities for the Point Arguello field are sited near Gaviota State Park. Other onshore and offshore oil and gas infrastructure has been abandoned and removed over the years.

Santa Barbara County Findings of Approval for past offshore oil and gas projects in Santa Barbara County have found adverse project and cumulative impacts to recreation, tourism, and aesthetics, from construction and operation of the project. To mitigate general, diffused, project and cumulative impacts in these and other areas, Santa Barbara County created a Coastal Resources Enhancement Fund which receives annual payments over the life of the project to be used for projects that enhance coastal recreation, aesthetic, tourism, or other environmentally sensitive resources (SBC, 1993). Specifically, projects make payments to a Coastal Resources Enhancement Fund, which provides enhancement projects that will compensate for residual impacts to coastal resources that are not otherwise mitigated. The analysis suggests that while the mitigation is effective, CREF expenditures tended to be more heavily weighted towards recreation, despite oil development impacts being as great or greater on environmentally sensitive resources, aesthetics, and tourism. In other words, while payments were sufficient to mitigate cumulative impacts, allocation of the Fund by the County may have caused an imbalance in mitigation across categories.

Use of hotel and campgrounds by construction workers employed to build onshore processing plants has been identified as a potential tourism-related impact. However, a study of socioeconomic impacts of offshore development conducted by the County for MMS indicated that use of hotels and campgrounds alleviates demand for and is a viable alternative to more conventional and permanent housing (MMS, 2000). Furthermore, under a socioeconomic monitoring and mitigation project separate from CREF, project operators made mitigation payments to the County to mitigate the impact from worker-occupied campsites in County parks.

**Table 4.9.3.2-1. Recreation units in Southern California.**

Unit Name	Day Use	Camping	Total	Activities
<b>San Luis Obispo County</b>				
Cayucos	687,994	0	687,994	Fishing pier Picnicing
Montana De Oro	661,502	46,508	708,010	Hiking Horseback riding Fishing
Morro Strand	95,011	37,904	132,195	Beach combing Surf fishing
Pismo	1,414,229	143,748	1,557,977	Part of city's beach area.
<b>Santa Barbara County (Also see table 4-10.4)</b>				
Carpinteria	515,886	164,519	680,405	Part of city's beach area.
<b>Ventura County</b>				
Emma Wood	45,167	58,289	103,456	Fishing Surfing
McGrath	36,442	210,823	247,245	Hiking Fishing
San Buena Ventura	105,837	725	106,562	Part of city's beach area
<b>Los Angeles County</b>				
Dockweiler	3,252,916	0	3,252,916	Beach combing Surfing Scuba Diving
Malibu Lagoon	27,574	42	27,616	Fishing Surfing Wildlife viewing
Point Dume	785,165	2,172	787,337	Whale watching Fishing Swimming Scuba Surfing
Robert H. Meyer	20,179	0	20,179	Fishing Swimming Scuba Surfing
Santa Monica	9,723,399	0	9,723,399	Part of city's beach area
Will Rogers	2,059,413	0	2,019,413	Swimming Scuba Surfing

\*\* Unpublished data, California Department of Parks and Recreation

**Table 4.9.3.2-2. Water oriented recreation activity in the Channel Islands National Marine Sanctuary, 1999. (Source: Unpublished data, National Oceanographic and Atmospheric Administration)**

Activity	Ventura County (person days)	Santa Barbara County (person days)	Los Angeles County (person days)	Location of highest distribution of the activity.
Whale Watching	17,718	8,266	Not reported	Anacapa West Santa Cruz Santa Rosa passage
Sailing	3,731	Not Reported	284	East Santa Cruz
Kayaking site seeing	65	1,168	Not reported	Santa Cruz West Santa Rosa West San Miguel
Charter boat diving	17,429	7,669	611	Anacapa East Santa Cruz
Private boat diving	42,155	4,513	581	Anacapa
Charterboat fishing	148,638	8,758	1,374	Anacapa East Santa Cruz
Private boat fishing	199,073	12,672	2,270	All five islands

**Table 4.9.3.2-3. Day use visitors and overnight campers to Channel Islands National Park, January to December 2000 (Source: Unpublished data, Channel Islands National Park, Ventura California)**

	Anacapa		Santa Barbara		Santa Cruz		Santa Rosa		San Miguel	
	Day Use	Camp	Day Use	Camp	Day Use	Camp	Day Use	Camp	Day Use	Camp
Jan	293	19	9	0	2345	169	1170	18	0	0
Feb	325	0	0	0	126	41	0	0	43	0
Mar	1783	5	6	0	1287	317	104	71	0	0
Apr	1655	43	160	45	1738	551	311	205	0	0
May	2269	104	125	60	1946	711	401	268	87	0
Jun	2360	146	210	144	1826	504	484	283	225	106
Jul	3060	165	320	94	2685	1200	433	273	145	36
Aug	2165	224	247	50	3225	1547	430	292	222	59
Sep	1158	159	18	0	2282	957	334	170	136	18
Oct	688	55	6	0	1245	527	159	149	79	0
Nov	422	36	3	0	671	267	22	16	3	0
Dec	306	6	7	0	462	167	25	19	9	0